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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,570

08/24/2006

Ryouichi Tokioka

AI-422NP

8348

23995

7590

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RABIN & Berdo, PC

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,570	<b>Applicant(s)</b> TOKIOKA ET AL.	
	<b>Examiner</b> Greg Binda	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

*Drawings*

1. The drawings are objected to because:
  - a. Reference numerals 5+ are used to identify features in Fig. 2 & 3 and modifications of those features in Figs. 4+. Such usage is proscribed. See MPEP § 608.02(e).
  - b. The synthetic resin holder 19 is drawn with inappropriate cross hatching. See MPEP § 608.02 for the appropriate pattern.
  - c. Reference character C2 appears at page 22, line 24, but does not appear in the drawings.
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

3. The disclosure is objected to because:
  - a. Page 2, line 4 mentions an unidentified “patent document 1”.
  - b. Page 8, line 21, the word “hollow” is misspelled.
4. The abstract of the disclosure is objected to because it is too long. Correction is required. See MPEP § 608.01(b).
5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

*Claim Objections*

6. Claim 21 is objected to because it fails to begin with a capital letter.
7. Claims 17 & 18 are objected to under 37 CFR 1.75 as being substantial duplicates of claims 19 & 20.

*Claim Rejections - 35 USC § 112*

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1, lines 10-12 recites the limitation, "plural rolling elements pinched elastically . . . by an elastic restoring force of the outer shaft". The specification fails to disclose how the outer shaft 13 should be constructed so that it provides an "elastic restoring force".

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 17, 18, 22 & 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 17, 18, 22 & 23 each recite the limitation, "a central angle" but fail to recite the points from which the angle is determined.

*Claim Rejections - 35 USC § 102*

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 10 & 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hobrough, II et al, US 6,038,941. Figs. 1-3 show an expandable shaft 20 comprising:

an inner shaft 90 having an outer peripheral surface;

a tubular outer shaft 30 having an inner peripheral surface 44 and being fit over the inner shaft to be fit therein;

at least one raceway groove 102a, 102b (see also col. 3, lines 10-12) formed on the outer peripheral surface of the inner shaft to extend longitudinally;

at least one raceway groove 62 (see also col. 3, lines 10-13) formed on the inner surface of the outer shaft to oppose the raceway groove of the inner shaft; and

plural rolling elements 140 pinched elastically in a space between the raceway grooves of the inner shaft and the outer shaft by an elastic restoring force (see col. 4, lines 5-9) of the outer shaft, wherein

the plural rolling elements are aligned in an array along a longitudinal direction of the raceway grooves,

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the outer peripheral surface of the inner shaft includes at least a pair of flat portions 102c that are parallel to each other,

the inner peripheral surface of the outer shaft includes at least a pair of flat limiting portions 52a that are parallel to each other, the limiting portions limit a quantity of relative rotation of the inner shaft and the outer shaft by engaging, respectively, with the corresponding flat portions, the outer shaft includes a deformation promoting portion 82 that promotes deformation of the outer shaft,

the deformation promoting portion is placed in a specific region of the outer shaft in a circumferential direction, and

the specific region is a region between a plane including a center of curvature of the raceway groove of the outer shaft as well as a central axis line of the outer shaft and each limiting portion.

14. Claims 1-4, 14, 17 & 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Zernickel, WO 2004/106758 (references below taken from US equivalent US 7,341,5250). Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Zernickel shows a expandable shaft comprising:

an inner shaft 2 having an outer peripheral surface;

a tubular outer shaft 1, 13-16 (see also col. 4, lines 55-57) having an inner peripheral surface and being fit over the inner shaft to be fit therein;

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at least one raceway groove 33, 34 formed on the outer peripheral surface of the inner shaft to extend longitudinally;

at least one raceway groove 17-24 formed on the inner surface of the outer shaft to oppose the raceway groove of the inner shaft; and

plural rolling elements 3, 4 pinched elastically (see col. 4, line 46) in a space between the raceway grooves of the inner shaft and the outer shaft by an elastic restoring force of the outer shaft,

wherein the plural rolling elements are aligned in an array along a longitudinal direction of the raceway grooves,

the outer peripheral surface of the inner shaft includes at least a pair of flat portions 32 that are parallel to each other,

the inner peripheral surface of the outer shaft includes at least a pair of flat limiting portions 28 that are parallel to each other,

the limiting portions limit a quantity of relative rotation (see col. 6, line 48) of the inner shaft and the outer shaft by engaging, respectively, with the corresponding flat portions,.

the outer shaft includes a bending portion (One is indicated by the lead line of numeral 1 in Fig. 2) that promotes deformation of the outer shaft.

### *Conclusion*

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 10:30 am to 8:00 pm with alternate Fridays off.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg Binda/  
Primary Examiner, Art Unit 3679